



***Axcelis is Uniquely Positioned with the  
Capability, DNA, and Unwavering Focus to  
solve customers' high value, high impact,  
ion implantation challenges.***

May 4, 2021

***axcelis***





## ***Safe Harbor Statement***

*This presentation and discussion contain forward-looking statements, including our expectations for future revenues, expense reductions, profits, and other results that are forward-looking statements under the SEC's safe harbor provision. These forward-looking statements are based on management's current expectations, and are subject to the risks inherent in our business. These risks are described in detail in our Form 10-K annual report and other SEC filings. Our actual results may differ materially from our current expectations. We do not assume any obligation to update these forward-looking statements.*



## Axcelis at a Glance

- Global leader in technology development and manufacturing of ion implant systems and services for the semiconductor industry for over 40 years
  - Serving a greater than \$1B ion implant systems market
  - Based in Beverly, MA with headcount of approximately 1000 worldwide
  - Global infrastructure supporting customers in 31 countries
  - Growing installed base of over 3200 tools
  - Strong IP portfolio with >800 patents
- Supplier of record to leading semiconductor CAPEX spenders in all market segments including DRAM, Flash, Foundry and Logic



## Recent Axcelis Technologies Achievements

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**Axcelis Named to Forbes' List of  
America's Best Small-Cap Companies  
Ranking #19 Out of 100 Companies**



*The Boston Globe*

**2020**  
**Top 100**  
**WOMEN-LED BUSINESSES**

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## ***Q1 Highlights & Summary***

- **Strong Q1 financial performance**
  - Revenue of \$132.8M and EPS of \$0.48
  - Gross margins 42.5%
  - CS&I revenues of \$51.8M
  - Quarter end cash balance of \$207.5M
- **Current market and industry outlook is very strong across all segments**
- **Axcelis expects 2021 revenue to exceed \$550 million**
- **China represented 39% of shipments in Q1 and will remain strong in 2021**
  - Customers include a diverse base of domestic and multinational customers
  - SMIC added to Entity List requiring licenses for all shipments
    - No licenses were granted in Q1 and no systems were shipped in the quarter
    - Received initial licenses in early Q2 and have begun shipping systems and parts
- **Continued focus on protecting the health and safety of our employees while meeting customer needs as we manage through the challenges created by COVID-19**

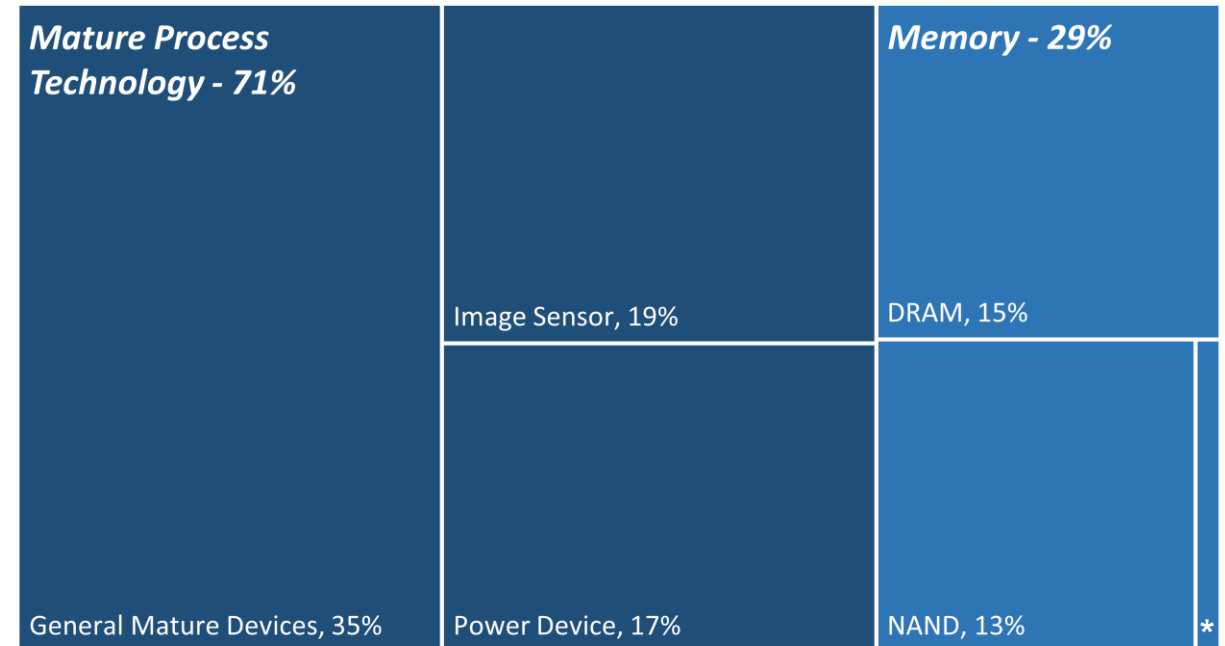
## ***Financial Results and Outlook (GAAP)***

	<u><b>Q1 2021</b></u>	<u><b>Q2 2021 Outlook</b></u>
<b>Revenue</b>	<b>\$132.8M</b>	<b>\$135M - \$140M</b>
<b>Gross Margin</b>	<b>42.5%</b>	<b>~41.5%</b>
<b>Combined R&amp;D and SG&amp;A Expenses</b>	<b>\$36.1M</b>	<b>~27%</b>
<b>Operating Profit</b>	<b>\$20.3M</b>	<b>\$19M - \$21M</b>
<b>Net Income</b>	<b>\$16.5M</b>	
<b>EPS</b>	<b>\$0.48</b>	<b>\$0.43 - \$0.47</b>
<b>Total Cash</b>	<b>\$207.5M</b>	
<b>Debt</b>	<b>\$0</b>	
<b>Inventory</b>	<b>\$174.4M</b>	

## Strong Systems Revenue Growth in Key Target Market Segments

- Long term growth expected to continue in key market segments due to the highly differentiated Purion ion implanters and extensions
- Automotive adoption of EV and ADAS expected to drive high growth in power and image sensor devices
- 5G adoption expected to drive growth across all semiconductor market segments

2020 Market Segment Systems Revenue



# Target Business Model (GAAP)

## The Path to Market Share Leadership

Expect 2021 revenue to exceed \$550M

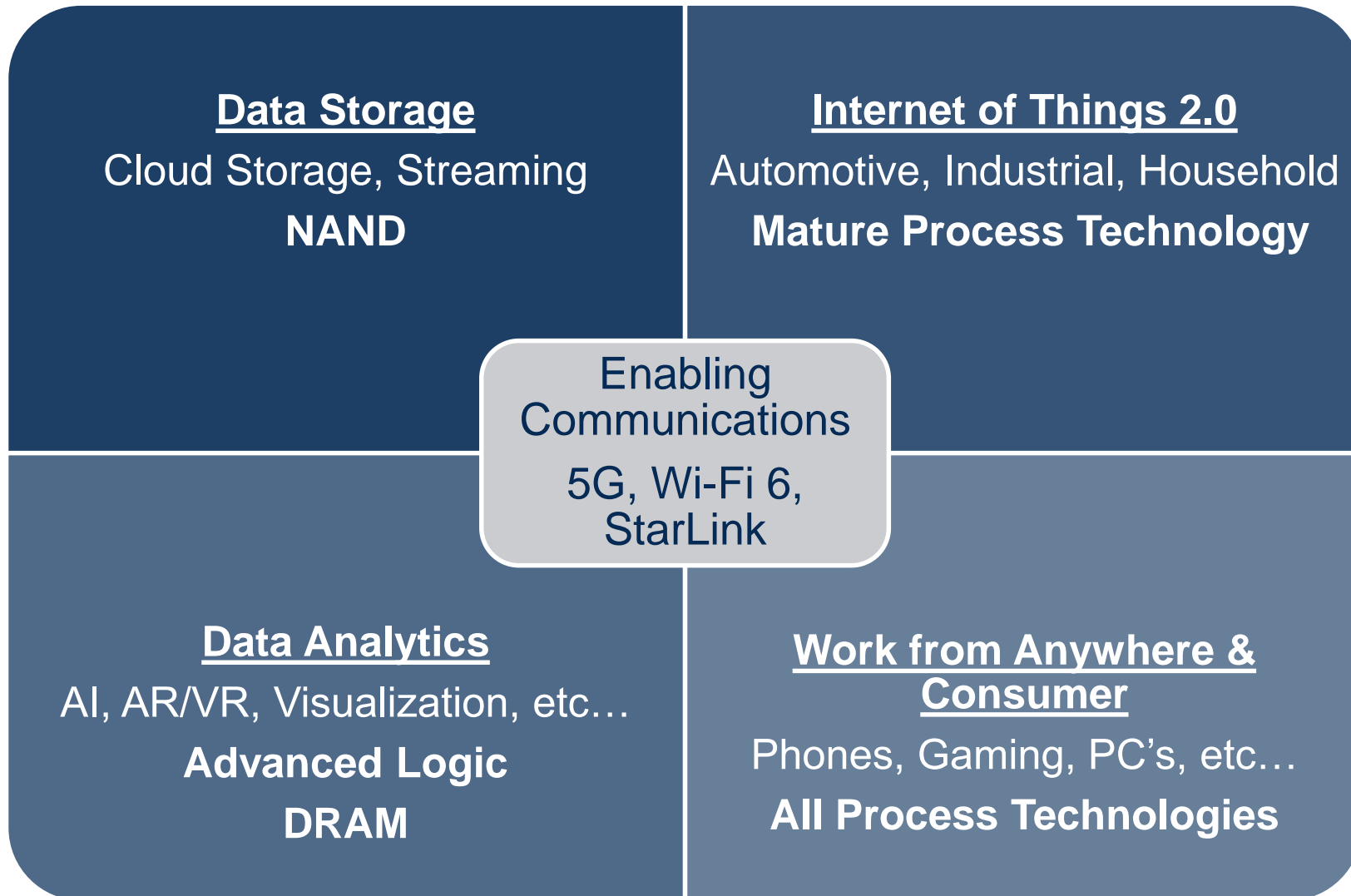
Revenue	\$301.5M 2015(A)	\$267.0M 2016(A)	\$410.6M 2017(A)	\$442.6M 2018(A)	\$343.0M 2019(A)	\$474.6M 2020(A)	\$550M Model*	\$650M Model*
Gross Margin	33.7%	37.3%	36.6%	40.6%	42.0%	41.8%	42-43%	44-45%
Total OPEX	26.8%	31.1%	24.9%	27.0%	35.0%	29.6%	~25%	~24%
Operating Profit	6.9%	6.2%	11.7%	13.5%	7.1%	12.2%	17-18%	20-21%
Free Cash Flow (Cash From Operations – Capex)	5.5%	(4.1%)	11.9%	9.5%	(7.5%)	13.2%	>15%	>17%**

8 \* The model is not a forecast of results but is intended to be indicative of the annual results Axcelis may achieve based on our strategic objectives

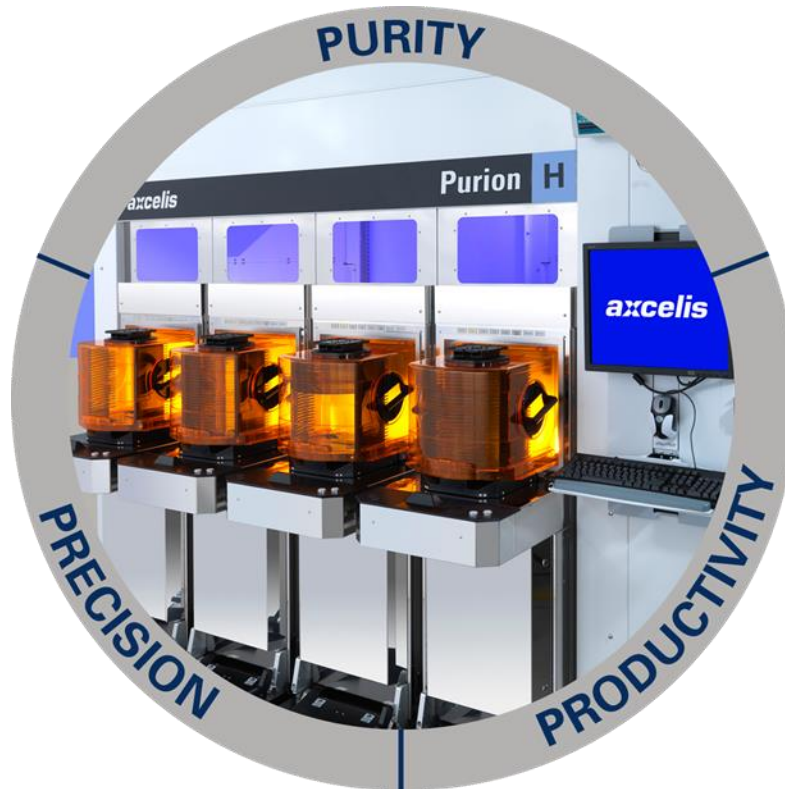
\*\* Assumes our federal net operating loss carryforwards have been consumed and Axcelis is now paying cash taxes



## ***Strong Market Expected to Drive Extended Cycle***



# ***Purion – The Core of Our Growth Strategy Expanding Into New High Value Applications***



- Innovative scanned spot beam architectures with advanced energy filters
- Common endstation and control system
- Advanced source technology



# New Purion Products Target High Value Applications and Market Segments

Ion Implantation		Base Purion Product	Power	Image Sensors	Power	Image Sensors	Advanced Memory/Logic
High Current ~50%-55% of TAM	Common Purion Platform	H	H80		H200		Dragon
High Energy ~30% of TAM		XE	EXE	EXE VXE	XE SiC	XEmax	
Medium Current ~15%-20% of TAM		M	M SiC				
Phase 1		Phase 2		Current Phase			

## ***Purion Growth Initiatives***

- **Geographic expansion**
  - **China focus on mature process technology and memory with large diverse group of both domestic and multinational customers**
  - **Japan focus on power devices, image sensors and NAND**
- **Purion footprint growth at our existing customer base**
  - **Adding Purion product types and served applications through joint development and focused segment and product differentiation**
- **Further penetration into Advanced Logic process flows with challenging implant requirements**
  - **Material modification and high aspect ratio implants**
- **New implant applications**
  - **Collaborating with customers and industry peers to develop novel uses for ion implant**
- **Additional manufacturing capacity closer to our customers to support growth beyond \$650M**



# Key Purion Placements in Target Segments

## Supporting Long Term Revenue Growth and Margin Expansion

### **AXCELIS SHIPS MULTIPLE PURION HIGH ENERGY SYSTEMS TO LEADING CMOS IMAGE SENSOR MANUFACTURERS**

#### ***New Product Extensions Driving Market Leadership in Image Sensor Market***

**BEVERLY, Mass., Oct. 27, 2020** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has shipped multiple Purion VXE™ and Purion EXE™ high energy systems to several leading CMOS image sensor manufacturers. The Purion VXE and Purion EXE are extended energy range solutions for the industry leading Purion XE™ high energy implanter. The systems shipped in the third quarter.

### **AXCELIS SHIPS PURION H200™ HIGH CURRENT IMPLANTER TO A SECOND LEADING POWER DEVICE MANUFACTURER**

#### ***Innovative System Features Enabling Technology for Power Device Applications***

**BEVERLY, Mass., Feb. 2, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today the second shipment of the Purion H200™ high current implanter. The Purion H200 system went to a leading power device manufacturer, targeted for use in a production ramp for Si power devices. The system shipped in the fourth quarter.

### **AXCELIS ANNOUNCES SHIPMENT OF THE SECOND 'PURION XEmax' TO A LEADING FOUNDRY IN ASIA PACIFIC**

#### ***New Product Extension Features Enabling Technology for Emerging Image Sensor Market***

**BEVERLY, Mass., Feb. 22, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has shipped the second Purion XEmax™ high energy evaluation system to a leading foundry in the Asia Pacific region. The Purion XEmax will be used for CMOS image sensor manufacturing. The system shipped in the first quarter.

### **AXCELIS ANNOUNCES FIRST SHIPMENT OF 'PURION H200 SiC POWER SERIES' IMPLANTER**

#### ***Enabling Technology for SiC Power Device Applications***

**BEVERLY, Mass., March 8, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has shipped the first Purion H200 SiC Power Series™ implanter. The new Purion H200 product line extension, featuring innovative silicon carbide capability, shipped to a leading power device manufacturer to support a production ramp for SiC power devices. The system shipped in the first quarter.

### **AXCELIS ANNOUNCES MULTIPLE SHIPMENTS OF PURION HIGH ENERGY SYSTEMS TO LEADING CMOS IMAGE SENSOR MANUFACTURERS**

#### ***Purion is the Implant Platform of Choice for Image Sensor Manufacturing***

**BEVERLY, Mass., March. 31, 2020** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of innovative, high-productivity solutions for the semiconductor industry, announced today that it has shipped multiple Purion VXE™ high energy systems to leading CMOS image sensor manufacturers. These shipments include a follow on order to the recently closed Purion VXE evaluation. The Purion VXE is an extended energy range solution for the industry leading Purion XE™ high energy implanter. The systems shipped in the first quarter.

### **AXCELIS ANNOUNCES MULTIPLE FOLLOW ON SHIPMENTS OF 'PURION M SiC POWER SERIES' IMPLANTER TO LEADING POWER DEVICE MANUFACTURERS**

#### ***System Features Innovative High Temperature Silicon Carbide Capability for the Power Device Market***

**BEVERLY, Mass., April 14, 2021** -- Axcelis Technologies, Inc. (Nasdaq: ACLS), a leading supplier of enabling ion implantation solutions for the semiconductor industry, announced today multiple follow on shipments of the Company's Purion MT™ SiC medium current implanter to several leading power device chipmakers located in Europe. The Purion M features Axcelis' innovative solution for high temperature silicon carbide processing. The systems, which shipped in the first quarter, will be used in high volume production of power devices supporting automotive, mobile and the IoT market spaces.

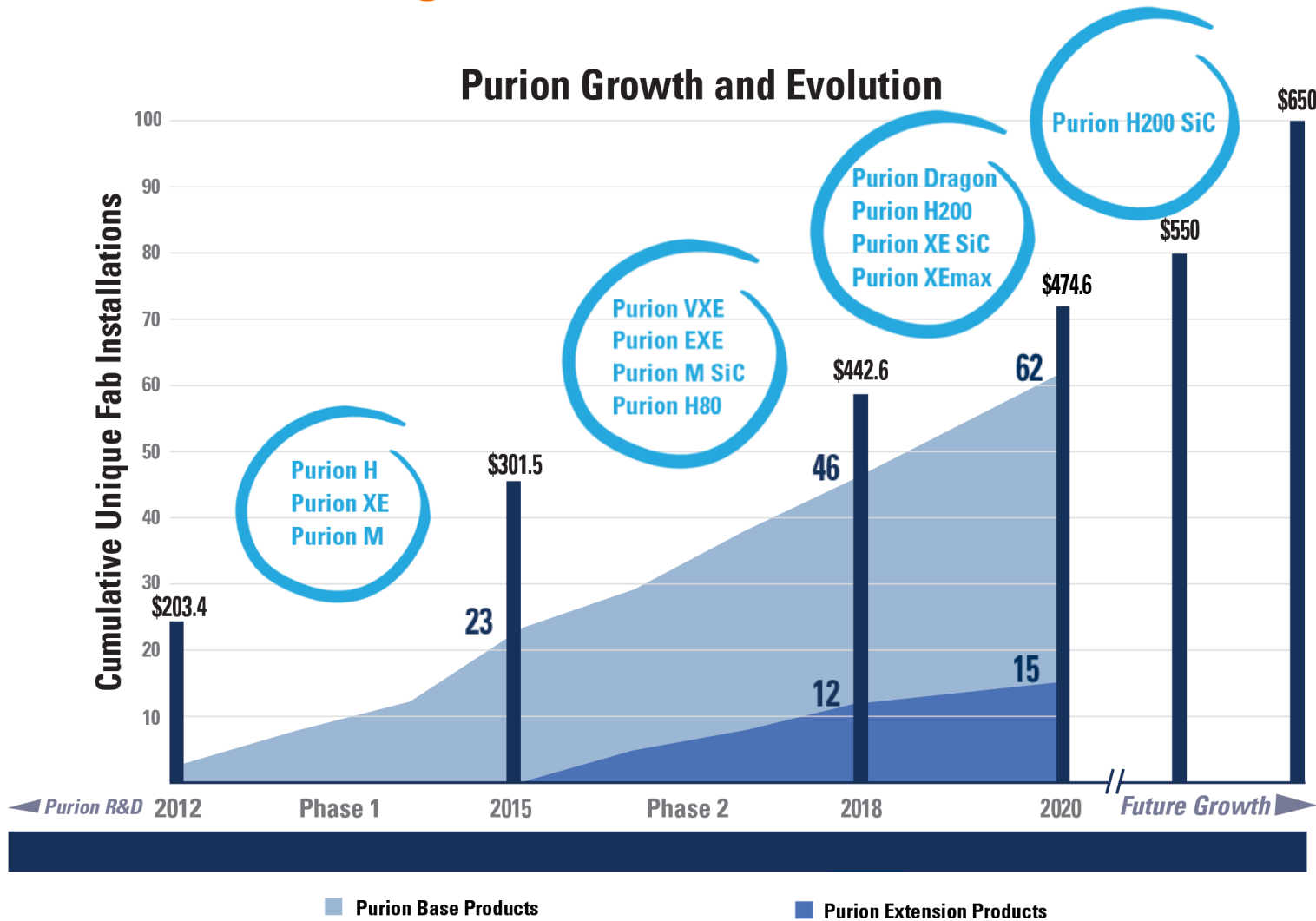
## Accelerated Purion Systems Evaluation Activity

- Six Purion evaluation systems currently in the field with additional systems expected in 2021
  - Located at strategic customer sites
  - Placements in key market segments
  - Successfully closed Purion VXE evaluation in Q1
  - Shipped second Purion XEmax evaluation to a second customer
- Continued successful evaluations of the new products in these key markets will drive Axcelis beyond the \$650M target model objective

	Memory		Mature Process Technology		Advanced Logic	Total Systems
	DRAM	NAND	Image Sensor	Power Device		
High Current	Purion Dragon	Purion H		Purion H200	Purion H	4
High Energy			Purion XEmax Purion XEmax			2
Total Systems	1	1	2	1	1	6



## Purion – Fueling Axcelis' Growth



- Offering new Purion products that solve high value, high impact implant challenges that will drive customer, employee and investor satisfaction
- Established differentiated segment-focused Purion products that specifically meet customers' emerging implant challenges
- Accelerated the segment-focused strategy into the high current market that represents ~50%-55% of the Ion Implant TAM

## ***\$650M Business Model Yields Gross Margins of 44% to 45%***

### **■ Gross margin improvements driven by**

- Sales growth of new Purion products and extensions
- Growth in CS&I upgrades and spares business
- Leveraging higher volume and supply chain optimization
- Cost out from value engineering projects leveraging the common Purion platform
- Lower warranty, installation and evaluation costs

## ***Axcelis Capital Strategy***

- Purchased \$12.5 million dollars of shares under our stock repurchase program
- Have available a “well-known seasoned issuer” Form S-3 shelf registration statement covering a future offering of common stock or other securities. As a WKSI, we can file a Form S-3 with the type and amount of securities to be specified in the future
- Have available a \$40 million line of credit
- These financing vehicles offer flexibility for our cash strategy and support of future CAPEX requirements
- The company continues to maintain a conservative view on cash and will maintain a strong, healthy balance sheet





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